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ABSTRACT

Ninety-six male and female undergraduates participated in a test of the influence of sex role on performance in a masculine task. Subject sex, norm (challenging or not challenging), and experimenter (male, female, or no experimenter present) were varied in a 2 x 2 x 3 design. When challenged, subjects worked more successfully in the presence of a female than before a male or with no experimenter present. Results support the hypothesis that the arousal of achieving tendencies may depend in part on the importance and conspicuousness of role cues. Implications for industrial performance and for future research are discussed. (Author)

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# Sex Role as a Mediator of Achievement in Task Performance

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# Sex Role as a Mediator of Achievement in Task Performance

Although 40% of American workers are women, psychologists have generally considered goal-directed (achieving) behavior the sole province of men. Research studying achieving behavior and the achievement motive usually examines only male subjects and does not attempt to generalize to women. Studies using women have often been unsuccessful in finding readily interpretable results (Karabenick & Marshall, 1974; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971).

While most men appear to have a readily identifiable achievement motive (the motive to approach success minus that to avoid failure), some research suggests that the achievement motive is overshadowed in women by the motive to avoid success (Horner, 1970, 1972). The motive to avoid success presumably springs from acquisition by females of the social value that success is inappropriate for themselves. Thus a woman who "might otherwise succeed" at a challenging task is led instead toward failure.

Horner (1972) suggests that arousal of the motive to avoid success may be mediated by sex role rather than being present in all achievement arousing situations. If success is distinctly unfeminine (and if femininity is valued), women may fear suc-

cess in those situations in which the norms for correct sex role behavior are both conspicuous and important. Conversely, when such norms are neither obvious nor important, the motive to avoid success is not strongly aroused, and a woman may meet a challenging situation with a relatively open attempt to succeed.

Horner did not extend her discussion to males directly. However, the argument may be offered that achievement is an approved masculine behavior in contemporary American society. The arousal of males toward achievement on an appropriately challenging task should be heightened by conditions in which sex role prescriptions for success are conspicuous and important. Increased sensitivity to sex role norms should result in male behaviors opposite to those expected from females.

Larwood, Zalkind, & Legault (1975) attempted to define some of the conditions which intrinsically increase role awareness. They found that the check cashing performance of both male and female bank tellers was reactive to sex role prescriptions when the tellers faced customers of the opposite sex. Cross-sex dyads presumably served to make sex role both obvious and important to tellers, while same-sex dyads provided no such cues. In agreement with their "role salience" notion, we expected that subjects in the present study would more likely demonstrate

appropriate sex role behavior before members of the opposite sex (a condition of role salience), than before those of their own (a condition without role salience).

In consequence, we hypothesized that under challenging conditions women would more freely attempt success in the presence of a female observer. In the presence of a male, women's success would be inhibited by the salience of the societal proscription against success. Challenged men were similarly expected to be more successful before a female observer, who might arouse role prescriptions endorsing success, than before a male observer who normally would not.

Two comparison baselines were employed in this study. In one (no challenge), subjects were given information indicating that success on the task would not be particularly valuable. It was expected that subjects who might otherwise be motivated to achieve would turn in a relatively poor performance in this condition. As a different control, some subjects performed in the absence of an observer. Since no individual recognition could then be given for success, the "no experimenter present" condition was expected to eliminate role effects, leaving differences only in ability and self-concept. The task itself was mechanical; we consequently expected performance differences favoring males over females.

## Method

### Subjects and Task

Ninety-six male and female university students were randomly assigned to appropriate cells of the 2 (Subject Sex) x 2 (Norm: challenge or no challenge) x 3 (Experimenter: male, female, or no experimenter present) design. Experimenters were two male and two female undergraduates.

The task simulated certain industrial production activities. Subjects attempted to drop marbles from a 30 cm. height through a small hole in a wooden box. A wire cage over the box prevented the marbles from being placed into the hole directly; the cage lid was lifted separately for each attempt.

Norms were established from pretesting such that meeting the low norm required better than average skill; the high norm was extremely difficult. Pretesting also confirmed that the task was difficult although quickly learned, and that it appeared significantly masculine.

### Procedure

The experimenter demonstrated the apparatus and explained the task as a replication to determine the general applicability of norms obtained previously at another (unspecified) university. The norm was manipulated by presenting the "findings" of the other university on a poster facing the subject. Challenge subjects saw a poster indicating that the opposite sex

had previously done better than their own. For no challenge subjects, the sex designations on the poster were reversed.

For subjects in the male or female experimenter conditions, the experimenter remained in the experimental room recording successes for each 15-second interval during a three minute period. In "no experimenter present" conditions, the experimenter explained that recordings of successes were automatic. The experimenter then left the room, ostensibly to start the next subject. Recordings in these latter conditions were made via a counter in an adjoining observation room. Questionnaires were administered later.

## Results

The behavioral measure was examined using a two-tail binomial test (Bradley, 1968) in which cells were compared across each of the 12 recording intervals.[1] As expected, actual experimenter sex was unimportant when the experimenter had left the room. Consequently, results in the no experimenter present conditions were combined across actual experimenter sex. Table 1 shows the mean success rate for each of the remaining conditions.

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Insert Table 1 about here

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In order to test the hypothesis of superior performance

with a female observer, results for challenged subjects having a female experimenter present were compared with those for challenged subjects with a male experimenter or with no experimenter present. As indicated in Table 1, male subjects with the female experimenter were reliably superior to those with a male experimenter ($p < .05$; for other comparisons, $p < .15$; $N = 8$). When challenge results were aggregated by combining across subject sex, however, the overall differences were significant: challenge subjects were more successful with a female experimenter present (vs. male experimenter, $p < .001$; vs. no experimenter present, $p < .05$; $N = 16$).[2]

As expected, no differences were produced by the task norms in the no experimenter present condition. Between-cell comparisons of males with females also failed to show reliable differences in the absence of the experimenter ($p < .15$; $N = 8$). However, with the challenge and no challenge cells combined, results in the no experimenter present conditions showed that overall males performed the task better than females ($p < .001$; $N = 16$).

When achievement behavior was not aroused (no challenge) the success rate for challenge males held constant across Experimenter conditions. The number of successes of males before a male experimenter was lower in the challenge condition than in the no challenge condition ($p < .05$; $N = 8$) however, possibly

indicating that the performance of challenged males was inhibited by the male experimenter. The performance of unchallenged females was markedly lower with an experimenter than with no experimenter present. This result may also indicate some inhibition of performance. In agreement with this rationale, responses to a questionnaire appeared to indicate a lower belief by females in the no challenge condition that women had previously outperformed men. Being suspicious of the experimenter (Subject Sex x Norm interaction: $F = 4.58$, $p < .05$), no challenge women may have been less willing to perform in the experimenter's presence.

## Discussion

In general the results give qualified support to Horner's (1972) suggestion that the lack of success by women in an achievement-oriented situation is mediated by sex role. The sex of the observer in the present study influenced the performance of subjects of both sexes--although when considered separately, the result was reliable only for males. These findings could not have been predicted from the use of classical achievement motivation theory alone.

It may be useful to note that the effectiveness of sex role as a variable has been greatly enhanced in the present study by the particular conditions of this experiment. The

only advantage to success was the demonstration of unexpected competence to the experimenter. Consequently the experimenter's attributes would be expected to greatly influence the outcome. In this light, it may be possible to explain the withholding of performance by men challenged by a male experimenter. With no extrinsic reward for doing well, and no interest in impressing the experimenter, such subjects had nothing to gain through asserting themselves. However, exertion might expose the men to loss of self-esteem if they proved worse than women at the mechanical task.[3]

The evidence justifies further examination of the effect of sex role variables on performance. It would be useful, for example, to replicate the design used here while varying the sexual identification of the task. The relationship between measured need for achievement in women and performance under varying role conditions might also be directly considered (see Karabenick & Marshall, 1974; Sorrentino & Short, 1974).

Although more work is needed to establish the generalizability of these results, some practical applications in performance--particularly industrial performance--are suggested. Worker performance may be altered by changes in the role conditions surrounding that performance. For example, it appears that workers may not necessarily perform best with a male su-

pervisor or in unchallenging tasks. Supervision by members of both sexes might be examined in industrial situations... even on a "masculine" task.

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## Footnotes

[1]The decision not to use analysis of variance was made apriori due to the irregular variance and skew intrinsic to a complex mechanical task of this nature.

[2]Aggregation results in a doubling of cell N and in a considerable increase in the power of the analysis.

[3]The a posteriori suggestion of performance inhibition raises the question of whether alternative overall explanations might better fit the data. A simple expectation approach does not have this quality, however, as performance clearly did not match the norms presented. A hybrid approach in which both females and tasks performed best by females are devalued by subjects (while male-associated tasks are highly valued) similarly fails to explain the data. Men performed best before a woman when told women do better; norm conditions produced differences only when the experimenter was present. Thus the explanation offered in this paper appears to be the most viable.

Table 1

Mean Number of Successes Per Interval

| Subject Sex | Male | Female |
|---|---|---|
| Male Experimenter | | |
| Challenge | $1.13_{de}$ | $1.18_{cd}$ |
| No Challenge | $1.59_{abc}$ | $.87_{e}$ |
| Female Experimenter | | |
| Challenge | $1.83_{a}$ | $1.50_{bcd}$ |
| No Challenge | $1.51_{bcd}$ | $.87_{e}$ |
| No Experimenter Present | | |
| Challenge | $1.58_{abcd}$ | $1.16_{d}$ |
| No Challenge | $1.60_{ab}$ | $1.20_{bcd}$ |

Note. N per cell is 8. Means not sharing common subscripts are sig ificantly different from one another by a two-tail binomial test at .05 or better.